中華水土保持學報, 39(2): 207-224 (2008)
Journal of Chinese Soil and Water Conservation, 39(2)*:207-224* (2008)

以水文連續方程式建立滯洪容積計算公式與圖解

洪耀明

摘　　要　滯洪池洪水演算可用水文連續方程式來表示，但受限於設計規模小，大部份工程設計採用簡化模式計算最大滯洪容積。本研究以水文連續方程式所建立之數值模式爲基礎，建立滯洪池最大滯洪容積圖解法及迴歸公式法，並經實例驗證得知所求算結果與數值解一致，因此這些簡便的方法可提供工程設計所應用。此外，本研究發現採用孔口之滯洪池所需最大滯洪容積較溢流口小；而退水時間越長，所需滯洪容積越小。

關鍵詞：水文連續方程式、數值模式、圖解法、最大滯洪容積。

Establishing an of Empirical Formula and Graphic Methods for Detention Pond Volume Calculation Using Hydrological Continuity Equation

Yao-Ming Hong

ABSTRACT　Although the hydrological continuity equation can be applied to the flood routing of a detention pond, the engineering design mostly adopts simplified models to calculate the maximum detention volume limited to the small design scale. Based on the numerical model developed by the hydrological continuity equation, this study establishes several graphic methods and a regression method to estimate the maximum storage volume of a detention pond, which are fairly consistent with the numerical solution. Therefore, these simple and convenient methods can be used in engineering design. In addition, this study shows the maximum storage volume using an orifice as the outflow device is smaller than using a weir as the outflow device. A long recession time will require small detention volume.

Key Words: hydrological continuity equation, numerical model, graphical estimation method, maximum detention volume.

明道大學環境規劃與防災學系助理教授（通訊作者）
Assistant Professor, Department of Environment and Disaster Management, MingDao University, 369 Wen-Hwa Rd., Peetow, Changhua 52345, Taiwan, R.O.C. (Corresponding Author)
E-mail：blueway@mdu.edu.tw